

TABLE 5.—*Precipitation departures, monthly and annual, 1936*[Compiled from tables entitled "climatological data for Weather Bureau stations" contained in the 12 issues of the *REVIEW* during 1936]

Districts	January	February	March	April	May	June	July	August	September	October	November	December	Sum
New England.....	+2.4	-0.5	+2.6	+0.3	-1.4	+0.8	-1.4	-0.3	+0.5	+0.4	-1.5	+3.5	+5.4
Middle Atlantic.....	+2.7	-0.2	+1.3	.0	-1.3	+1	-1.3	-0.4	+3	.0	-1.3	+1.7	+1.6
South Atlantic.....	+2.0	+7	+1.9	+1.9	-2.4	-1.1	+5	-4	+4	+2.2	-6	+1.8	+6.9
Florida Peninsula.....	+8	+3.1	+1.5	-8	+8	+6.1	+1.6	+1.6	-2.3	-1.1	-1	+2	+11.4
East Gulf.....	+4.8	+1.8	-2.4	+2.0	-1.4	-2.5	+1.1	.0	-1.2	-3	-1.0	+6	+1.5
West Gulf.....	-1.7	-1.4	-1.3	-8	+2.7	-1.9	+1.4	-1.5	+1.8	-5	-1.0	.0	-4.2
Ohio Valley and Tennessee.....	-7	-7	+5	+1	-2.1	-2.5	.0	-9	+2	+1.0	.0	+3	-4.8
Lower Lakes.....	-6	-1	+1.7	.0	-1.5	-1.2	-1.2	-6	+8	.0	-1	-6	-3.4
Upper Lakes.....	+2	.0	-7	-4	-8	-1.9	-2.4	+8	+1.4	.0	-1.1	+3	-4.6
North Dakota.....	-1	+3	+2	-1.2	-1.7	-2.5	-1.8	-1.2	-5	-9	-3	-2	-9.9
Upper Mississippi Valley.....	-2	.0	-3	-1.0	-2.2	-1.9	-2.6	-1	+2.7	-1	-7	+7	-6.7
Missouri Valley.....	+2	-5	-1.3	-1.3	-8	-2.7	-3.1	-2.0	+2.1	-6	-8	+3	-10.5
Northern Slope.....	.0	+3	-1	-5	-1.2	-6	-5	-3	-5	.0	-4	.0	-3.8
Middle Slope.....	-1	-6	-8	-1.6	+5	-2.1	-1.9	-1.1	+2.0	.0	-9	.0	-6.6
Southern Slope.....	+1	-6	-4	-4	+2.0	-1.0	-1.0	-1.6	+2.5	-6	-7	-4	-2.1
Southern Plateau.....	-1	+3	-3	-3	-1	-2	+3	-4	+8	.0	-1	+1	.0
Middle Plateau.....	-1	+1.1	-2	-6	-8	+3	+7	+2	-2	+3	-5	+4	+6
Northern Plateau.....	+8	+3	-4	-5	-8	+4	+2	.0	-2	-9	-1.3	-6	-3.0
North Pacific.....	+2.1	-4	-1.0	-1.4	+1.0	+1.3	+3	-1	-1.1	-2.9	-5.5	-7	-8.4
Middle Pacific.....	+1.0	+3.6	-2.3	+2	-2	+4	+1	.0	-6	-1.2	-3.4	-9	-3.3
South Pacific.....	-1.6	+3.5	-8	-3	-4	.0	.0	+1	-1	+1.3	-8	+2.8	+3.7
United States.....	+6	+5	-1	-3	-6	-6	-5	-4	+4	-2	-1.0	+5	-1.8

## NOTES AND REVIEWS

Sir Napier Shaw (with the assistance of Elaine Austin). *Manual of Meteorology: Volume II, Comparative Meteorology*. Second Edition, Cambridge; at the University Press, New York; The Macmillan Co., 1936.

The *Manual of Meteorology* by Sir Napier Shaw first appeared in four large volumes during the years 1926-32 (a preliminary version of vol. IV was issued in 1919). Of these, the third and the fourth volumes are in general largely occupied with the physical and dynamical aspect of meteorology, the first volume with historical material, and the second with descriptive meteorology.

Volume II, *Comparative Meteorology*, which first appeared in 1928, has now, after a lapse of 8 years, appeared in a second edition, with both omissions and additions as well as corrections and modifications throughout the text, the net result of which is an increase of 35 in the number of pages. In using the volume, particular attention should be paid to the notes gathered together at the end (in ch. X), which bring information throughout the book up to date; a list of the omissions from the first edition is also included. The book comprises xlviii+472 royal octavo pages, and contains over 200 figures, including many maps and charts, numerous tables, bibliographies and references to literature, and a 20-page index.

The volume opens with 22 pages devoted to definitions and extended explanations of a number of physical and meteorological terms, followed by a 9-page discussion of meteorological nomenclature and units, and a graph that shows the duration of daylight throughout the year at different latitudes.

The first chapter briefly discusses solar and terrestrial radiation. The second chapter is a short account of the orographic features of the earth, sea ice, ocean currents, and geophysical phenomena more or less directly involved in meteorology—volcanoes, earthquakes, terrestrial magnetism, aurorae, atmospheric electricity; a map of annual frequency of days with thunder over the globe is included.

Chapter III considers the composition of the atmosphere (at all heights), including the solid impurities such as dust, smoke and nuclei.

In chapter IV, the normal distribution of temperature over the globe is discussed. The principal feature of the chapter is a set of monthly and annual world maps of normal temperature reduced to sea level, supplemented by maps of the average daily range throughout the year, the seasonal range, and sea-surface temperatures. Numerous tables and diagrams are also given. Earth temperatures and upper air temperatures are discussed at length, including the distribution of potential temperature and entropy in the free air. Chapter V presents a corresponding discussion of humidity, fog, cloud, precipitation, and evaporation, accompanied by world maps of normal dewpoints, cloudiness, and rainfall. Pressure, and the surface and upper air winds of the globe, are similarly treated in chapter VI, which also includes world charts of normal pressure at 2, 4, 6, and 8 kilometers.

After this discussion of the normal state of the atmosphere as represented by monthly and annual mean values and mean diurnal and seasonal variations, it is pointed out that a mean value is not necessarily the value that actually occurs with the greatest frequency; and in chapter VII the problem of the variations from the normal which are observed to be continually in progress is considered. In this chapter is included a discussion of meteorological periodicities, with a list of periods, of from 1 to 260 years in length, which have been found in various meteorological phenomena by different writers (that occupies five pages of fine print!) and of the application of correlation theory to meteorological phenomena.

Chapters VIII and IX are devoted to cyclones and anticyclones—their general characteristics and phenomena, paths, and structure, with brief mention of tornadoes, whirlwinds, and waterspouts. A short note by E. Gold on weather forecasting is included.—*Edgar W. Woolard.*